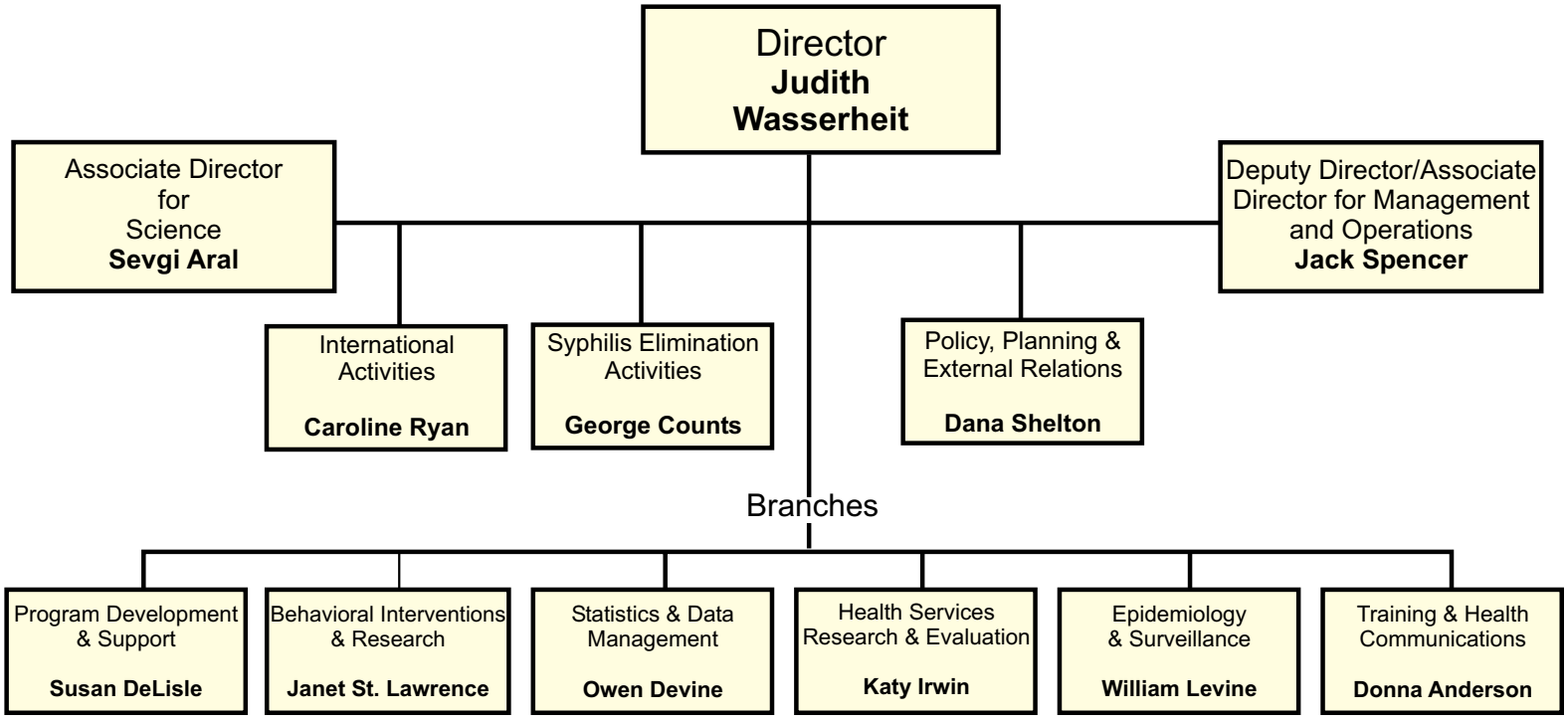
Division of STD Prevention

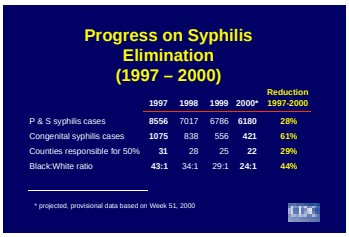


Syphilis Elimination

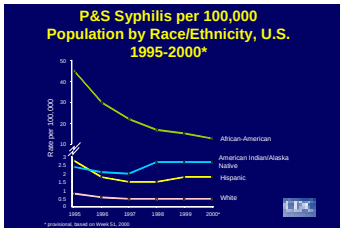
Background: The persistence of high rates of syphilis, a disease that is easily diagnosed and treated, is a sentinel event indicating a breakdown in the most basic public health capacity to control infectious diseases and ensure reproductive health. The syphilis elimination initiative will help rebuild this capacity by identifying this breakdown, rebuilding trust in the public health system, and forging community partnerships to help design and implement local strategies.

Syphilis elimination offers us a chance to: 1) reduce one of the most glaring racial disparities in public health; 2) help prevent HIV transmission; 3) improve infant health; 4) save almost $1 billion annually in health care costs associated with treatment of syphilis and HIV; and 5) enhance collaborations at the federal and local levels.

Accomplishments: From 1997-2000, there has been a 28% reduction in the number of primary and secondary (P&S) syphilis cases, with a 9% annual decrease seen in 2000. There has also been a 61% reduction in congenital syphilis cases, and a 44% drop in the black-white ratio.



Three demonstration sites were set up to field test the syphilis elimination program. Each site is projecting a 20%-30% decrease in cases of P&S syphilis from 1999 to 2000, compared to a 9% decline nationally.



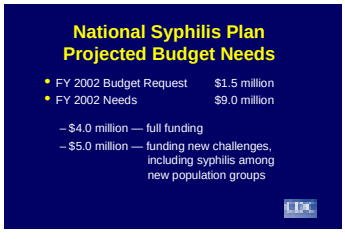
- The Davidson County demonstration site in Nashville, Tennessee, has embraced a broad approach, involving five working groups comprised of schools, the faith community, health care and social service agencies, and corrections. Their efforts have resulted in a 22% decrease in P&S syphilis from 1999 to 2000.

- The Wake County demonstration site in Raleigh, North Carolina, has a heavy emphasis on forging collaborations with corrections and community-wide education. Wake County has achieved a 31% decrease in P&S syphilis from 1999 to 2000.

- The Marion County demonstration site in Indianapolis, Indiana, involves a multi-agency coalition that has developed a comprehensive media and outreach campaign. In 1999 and 2000, Marion County led the nation in cases of P&S syphilis, but in the past year has achieved a 23% decrease in cases.

Syphilis elimination is not solely a CDC effort. It involves other federal agencies, such as NIJ, NIH, SAMSHA, and HRSA. One such model of interagency collaboration is the HRSA Community Health Outreach Education Services (CHORES) Project. CHORES is a multi-agency effort that links community action agencies and community health clinics with health departments; integrates health promotion, education, and disease prevention into primary care; and has five sites located in areas of high syphilis morbidity. In addition, they have developed a HRSA-wide syphilis elimination implementation plan, featuring enhanced testing and treating in all supported sites.

Challenges: Challenges in achieving syphilis elimination include:



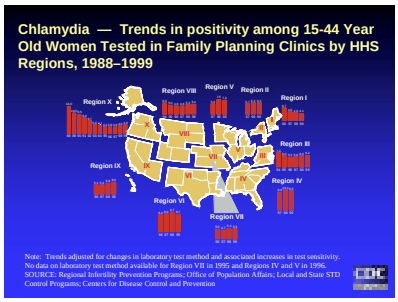
- New mini outbreaks of syphilis among MSM in several cities (Seattle, Los Angeles, San Francisco) potentially jeopardize advances toward elimination made in these areas; and

- Rates of syphilis have gradually risen among Hispanics/Latinos, while falling among African Americans, and remaining level among whites. Surveillance efforts and collaborations with Hispanic/Latino agencies and organizations must be increased.

Infertility Prevention

Background: Prior to the mid-1980s, STD control activities focused primarily on men with syphilis, and gonorrhea. An increased focus on chlamydia prevention occurred in the late 1980s due to a convergence of the following:

- Increased recognition of chlamydia as a widespread problem with significant female reproductive and infant morbidity;
- Availability of inexpensive chlamydia tests and effective treatment;
- Increased understanding of the need for widespread screening due to the asymptomatic nature of chlamydia (75% of women and 50% of men infected with chlamydia are asymptomatic).



Accomplishments: There have been significant accomplishments in program, policy, and research.

- Program has expanded to screen and treat approximately 50% of young women in 20 states and 20% in 30 states.
- A quality prevalence monitoring system has been established with more than 1,600 family planning clinics. Other sites are also submitting data including Job Corps, juvenile detention centers, prenatal sites and the Indian Health Service.
- The chlamydia screening measure made it to the full reporting set for HEDIS 2000. The measure is the percentage of enrolled sexually active women ages 15-25 years who are tested for chlamydia once a year.
- Research studies have been initiated to better characterize determinants of chlamydia transmission and to assess male screening as a strategy to reduce disease in women.

Challenges: There are still many challenges and issues facing STD-related infertility prevention:

- Disease trends, including: 1) continuing high burden of chlamydial infections; 2) increases in gonorrhea for the last two years; and 3) lack of morbidity and prevalence data in MCOs;
- Limited expansion of screening to women in family planning programs in the most populous states due to minimal funding increases. The availability of screening programs for men is virtually nonexistent;
- High cost of the most sensitive and specific laboratory tests for chlamydia and gonorrhea. Acquiring reimbursement for screening activities is difficult for most public health programs and laboratories;
- Emergence of decreased susceptibility of chlamydia and gonorrhea to Azithromycin; and
- Gonorrhea screening guidelines are needed to better target scarce resources.

Genital HPV Infection

Background: Genital HPV is probably the most common STD in the U.S. Approximately 20 million people are infected, with 5.5 million new infections occurring each year. Of persons ages 15-49 years, 15% are currently infected. Overall, 50%-75% of sexually active men and women acquire genital HPV infection at some point in their lives. There is no cure and no vaccine, although vaccine development is promising. New tests are available to detect “high-risk” types of HPV (related to cervical cancer) in women.

Accomplishments: Despite limited resources, CDC has made significant progress:

- In 1999, CDC convened an external consultants’ meeting to prioritize prevention activities and research needs. This meeting produced *Prevention of Genital HPV Infection and Sequelae: Report of an External Consultants’ Meeting*, a comprehensive 40-page report on prevention and research priorities.

- In 2000, CDC completed a large pilot HPV serosurvey in collaboration with NCID’s Division of Viral and Rickettsial Diseases. This survey using sera from NHANES-III, showed that 18% of women and 8% of men in the U.S. have HPV-16 antibody. Black women ages 20-29 years have the highest seroprevalence (36%).

- CDC is finalizing plans to add HPV testing into the new NHANES .

Challenges: Challenges include:

- Gaps in scientific knowledge, including: 1) significance of a positive HPV test; 2) risk factors for HPV persistence, which is a key determinant of progression of HPV infection to cervical cancer; 3) effectiveness of condoms; and 4) lack of available and effective therapy; and

- Widespread misinformation about all aspects of HPV and its consequences (including transmission, diagnosis, treatment, and prevention) among health care providers as well as patients and the general public.

STD Prevention for Adolescents

Background: The burden of sexually transmitted disease falls heavily on our nation's young people. Rates of the most common STDs are disproportionately high among adolescents. These high rates are due to a combination of biological and behavioral risk factors that peak during adolescence, as well as the challenges faced in providing STD prevention for adolescents. Our increased understanding of these risks and challenges places us in a unique position to move forward with new prevention efforts.

Rates of most common STDs are disproportionately high among adolescents.

- Highest rates of chlamydia and gonorrhea among youngest women
- Proportions of 15-19 year olds infected extremely high
  - Chlamydia Prevalence Monitoring Project: 6.36% (range 3.05-18.52)
  - National surveillance data: 2.5% of all females, 8% of African-American females

Accomplishments: Prevention for adolescents has been the focus of a number of ongoing research projects within the division. DSTDP has worked toward improved disease monitoring among adolescents, more effective behavioral interventions, integration of STD, HIV and teen pregnancy prevention, and improved programs and services. In addition, a national expert panel on adolescents and STD prevention was convened in September 2000, to expand the existing knowledge base and to assist in defining future directions.

We are moving forward in a number of ways, including:

- Collaborations with other CIOs to augment school-based STD education;
- The initiation of a multi-level intervention trial, guided by a workgroup with representatives from DSTDP, DHAP-SE, DHAP-IRS, DASH, and DRH. This multi-level approach will include efforts to (1) improve systems like schools and medical institutions to better serve adolescents; (2) increase parent involvement in STD prevention by improving family communication regarding sexual issues, increasing parental monitoring and family cohesion, and increasing parental awareness of the health care needs of their adolescents; and (3) facilitate community involvement and mobilization of resources for STD prevention efforts; and
- Collaboration with NIH and other federal agencies to evaluate the effectiveness of prevention and control strategies.

Challenges: Challenges include:

- Identifying and removing the social, financial and political barriers to successful STD prevention among adolescents;
- Identifying and removing impediments to accessing health care and STD prevention services by adolescents;
- Utilization of existing services must be improved; and
- Ambivalence concerning appropriate information for adolescents regarding STD prevention leads to confusing and conflicting messages.

Performance Measurement for STD Prevention Programs

Background: A common system of measurement holds great potential for STD prevention. CDC's goal is to develop common measures for all 65 project areas that would require annual reporting. This will provide a strategic "snapshot" of how the projects are doing and where STD prevention is going. This system will facilitate quality improvement, permit systematic assessment of the STD program, and provide feedback to management and policymakers.

Accomplishments: Development of an STD measurement system is currently underway:

- There is an ongoing collaborative effort between CDC and the National Coalition of STD Directors (NCSD; representatives from NC, CA, NE, IL, Los Angeles, CT, DE), involving conference calls every 2 weeks and meetings in Atlanta;
- A logic model has been developed that serves as the foundation for the development of the measurement system;
- Pilot projects are being developed to evaluate and refine candidate measures and determine the burden associated with the collection of data requested;
- The system will be phased in, beginning with the Program Announcement for FY 2003;
- Both "common" and "project specific" measures will be included;
- The system will track performance over time and assist with identifying needs for technical assistance.

Challenges: There are concerns in the field related to performance measurement. This will be addressed by:

- Implementing pilot projects, which are being initiated in 2001 to evaluate and refine candidate measures;
- Maintaining the involvement of the National Coalition of STD Directors in assessing appropriateness, utility, and feasibility of candidate measures, and in the decisions about which measures to include in future Program Announcements; and
- Developing and providing training and software support. Although there will be no punitive actions based on "measures," there will be accountability for "plans" and "actions," rather than results. Comparisons will be with "baselines" not with performance of other project areas.

Key Research Findings

The Internet as a Newly Emerging Risk Environment for Sexually Transmitted Diseases

A recent publication by DSTDP staff [(1)] compared risk of STD transmission for persons who seek sex partners on the Internet with risk for persons not seeking sex partners on the Internet and found people who seek sex using the Internet to be at greater risk for STDs than those who do not seek sex on the Internet. The comparison was based on cross-sectional survey data collected from clients of the Denver Public Health HIV Counseling and Testing Site in Colorado. The results indicated that Internet sex seekers were more likely to be men and homosexual than those not seeking sex via the Internet. Internet sex seekers reported more previous STDs, more partners, more anal sex, and more sexual exposure to men, men who have sex with men and partners known to be HIV positive, than those not seeking sex via the Internet.

[1]McFarlane M, Bull SS, Rietmeijer CA. The Internet as a newly emerging risk environment for sexually transmitted diseases. *Journal of the American Medical Association* 2000, 284(4):443-446.

Sexual Mixing Patterns in the Spread of Gonococcal and Chlamydial Infections

Recently, a number of scientific articles have highlighted the role of patterns of sexual connections for STD transmission dynamics. Recent findings described the effects of sexual mixing across age, race-ethnicity, socioeconomic status and sexual activity groups on risk for gonorrhea and chlamydial infection[(2)]. Based on data collected through face-to-face interviews with STD patients and STD clinic attendees in Seattle, Washington, the authors reported that partnerships discordant in terms of age, race/ethnicity, socioeconomic status and number of partners were associated with significant risk for gonorrhea and chlamydial infection. In this study, in low-prevalence subpopulations, within-subpopulation mixing was associated with chlamydial infection, and direct links with high prevalence subpopulations were associated with gonorrhea. These findings show that mixing patterns influence the risk of specific infections and should be included in risk assessments for individuals and in the design of screening, health education, and partner notification strategies for populations.

[2]Aral SO, Hughes JP, Stoner B, Whittington W, Handsfield HH, Anderson RM, Holmes KK. Sexual mixing patterns in the spread of gonococcal and chlamydial infections. *American Journal of Public Health* 1999, 89(6):825-832.

Alcohol Policy and Sexually Transmitted Disease Rates - United States, 1981-1995

Teenagers and young adults are at higher risk for acquiring sexually transmitted diseases (STDs) than older adults, and this risk is even higher for young people who consume alcohol [(3)]. If alcohol consumption does promote risky sexual behavior (through disinhibition due to the effects of alcohol), then government alcohol policies (such as alcohol taxation and minimum legal drinking age requirements) that discourage teen drinking might reduce STD incidence in teenagers and young adults. This study examined the association between gonorrhea incidence rates and alcohol policy in all 50 states and the District of Columbia for the years 1981 to 1995. Over this period, a statistically significant majority of the state beer tax increases were followed by a decrease in the gonorrhea rate (as compared to states without a beer tax increase) rate in young adults (24 of 36 States in the 15-19 year age group and 26 of 36 states in the 20-24 year age group), and this relationship was more pronounced for gonorrhea rates in men than in women. Similarly, a majority of the drinking age increases were followed by a relative proportional decrease in the gonorrhea rate, and this majority was statistically significant in the 15-19 year age group (29 of 44 states) but not the 20-24 year age group (18 of 33 states). A regression analysis supported these findings, as higher beer taxes were associated with lower gonorrhea rates in young adults in both age groups, and drinking age increases were associated with lower gonorrhea rates in the 15-19 year age group. The model estimates indicated that tax increases of $0.20 per six pack of beer and $1.00 per gallon of liquor tax may be associated with 2 to 9 percent reductions in gonorrhea incidence rates per year.

[3]Chesson HW, Harrison P, Irwin KL, Kassler WJ, Shelton D. Alcohol policy and sexually transmitted disease rates - United States, 1981-1995. *Morbidity and Mortality Weekly Report* 2000; 49(16):346-349.

Division of STD Prevention - 2000 Publications*

Behavioral Interventions and Research Branch

Belcher L, **St. Lawrence JS**. Women and HIV. Edited by Lorraine Sherr and Janet St. Lawrence, John Wiley & Sons, Ltd. *Women, Health and the Mind* 2000; Chapter 17.

Bloom FR. "New Beginnings": a case study in gay men's changing perceptions of quality of life during the course of HIV infection. *Medical Anthropology Quarterly* 2000; 15(1):1-19.

Bull SS, **McFarlane M**. Soliciting sex on the Internet: What are the risks? Sexually transmitted diseases and HIV? *Sexually Transmitted Diseases* 2000; 27(9):545-550.

Crosby RA, **Leichliter JS**, Brackbill R. Longitudinal prediction of sexually transmitted diseases among adolescents. *American Journal of Preventive Medicine* 2000; 18(4):312-317.

Crosby RA, Newman D, Kamb ML, Zenilman J, Douglas JM, Iatesta M, For the Project RESPECT Study Group. Misconceptions about STD-protective behavior. *American Journal of Preventive Medicine* 2000; 19(3):167-173.

Crosby RA, **St. Lawrence JS**. Adolescents' use of school-based health clinics for reproductive health services: data from the National Longitudinal Study of Adolescent Health. *Journal of School Health* 2000; 70(1):22-27.

Crosby RA, Yarber WL, Meyerson B. Prevention strategies other than male condoms employed by low-income women to prevent HIV infection. *Public Health Nursing* 2000; 17(1):53-60.

Ethier KA, Fox-Tierney R, Nicholas WC, Salisbury KM, Ickovics JR. Organizational predictors of prenatal HIV counseling and testing. *American Journal of Public Health* 2000; 90(9):1448-1451.

Greenberg J. Sexual victimisation of girls: implications for women's health and for prevention. Edited by Lorraine Sherr and **Janet St. Lawrence**, John Wiley & Sons, Ltd. *Women, Health and the Mind* 2000; Chapter 15.

Greenberg J, Abbruzzese B. Access to science-related information by federal assignees to STD programs. Division of STD Prevention, CDC, May 2000.

Greenberg J, Hennessy M, MacGowan R, Celentano D, Gonzales V, van Devanter N, Lifshay J. Modeling intervention efficacy for high-risk women. *Evaluation & the Health Professions* 2000; 23(2):123-148.

Hogben M, **St. Lawrence JS**. HIV/STD risk reduction interventions in prison settings. *Journal of Women's Health & Gender-Based Medicine* 2000; 9(6):587-592.

Hogben M, Wilson TE, Feldman J, Landesman S, DeHovitz J. The influence of HIV-related Knowledge and exposure fears on behavior change and incident STDs. *Women & Health* 2000; 30(2):25-37.

Ickovics JR, **Ethier KA**, Koenig LJ, Wilson TE, Walter EB, Fernandez MI. Infant birth weight among women with or at high risk for HIV infection: The impact of clinical, behavioral, psychosocial, and demographic factors. *Health Psychology* 2000; 19(6):515-523.

*Names in bold = DSTDP authors

Macke BA, Hennessy MH, **McFarlane M**. Predictors of time spent on partner notification in four US sites. *Sexually Transmitted Infections* 2000; 76(5):371-374.

McFarlane M, Bull SS, Rietmeijer CA. The Internet as a newly emerging risk environment for sexually transmitted diseases. *Journal of the American Medical Association* 2000; 284(4):443-446.

Miller S, Exner TM, **Williams SP**, Ehrhardt AA. A gender-specific intervention for at risk women in the USA. *AIDS Care* 2000; 12(5):603-612.

Epidemiology and Surveillance Branch

Blocker ME, **Levine WC**, St. Louis ME. HIV prevalence in patients with syphilis, United States. *Sexually Transmitted Diseases* 2000; 27:53-59.

Coggins C, Blanchard K, Alvarez F, Brache V, Weisberg E, **Kilmarx PH**, Lacarra M, Massai R, Mishell D Jr, Salvatierra A, Witwatwongwana P, Elias C, Ellertson C. Preliminary safety and acceptability of a carrageenan gel for possible use as a vaginal microbicide. *Sexually Transmitted Infections* 2000; 82:480-483.

Cohen MS, Ping G, **Fox K**, Henderson GE. Sexually transmitted diseases in the People's Republic of China in Y2K. *Sexually Transmitted Diseases* 2000; 27(3):143-145.

de Souza MS, Karnasuta C, Brown AE, **Markowitz LE**, Nitayaphan S, Garner RP, McNeil JG, Birx DL, Cox JH. A comparative study of the impact of HIV infection on natural killer cell number and function in Thais and North Americans. *AIDS Research and Human Retroviruses* 2000;16:1061-1066.

Dicker LW, **Mosure DJ**, **Levine WC**, Black CM, Berman SM. Impact of switching laboratory tests on reported trends in *Chlamydia trachomatis* infections. *American Journal of Epidemiology* 2000; 151: 430-435.

Fleming DT, **Levine WC**, Trees DL, Tambe P, Toomey K, St. Louis ME. Syphilis in Atlanta during an era of declining incidence. *Sexually Transmitted Diseases* 2000; 27:68-73.

Golden MR, **Schillinger JA**, **Markowitz L**, St. Louis ME. Duration of untreated genital infections with *Chlamydia trachomatis*: A review of the literature. *Sexually Transmitted Diseases* 2000; 27:329-37.

Guarner J, Southwick K, Greer P, Bartlett J, Fears M, Santander A, Blanco S, Pope V, **Levine W**, Zaki S. Testing umbilical cords for funisitis due the *Treponema pallidum* infection, Bolivia. *Emerging Infectious Diseases* 2000;6;487-492.

Gunn RA, Fitzgerald S, Aral SO. Sexually transmitted disease clinic clients at risk for subsequent gonorrhea and chlamydia infections: possible "Core" transmitters. *Sexually Transmitted Diseases* 2000; 27(6):343-349.

Gunn RA, **Harper SL**, Borntrager DE, Gonzales PE, St. Louis ME. Implementing a syphilis elimination and importation strategy in a low-incidence urban area, San Diego County, California, 1997-98. *American Journal of Public Health* 2000; 90:1540-1544.

Iverson C, McLean CA, Wang S, Levine WC. Fluoroquinolone-resistance in *Neisseria gonorrhoeae*, Hawaii, 1999, and decreased susceptibility to azithromycin in *N. gonorrhoeae*, Missouri, 1999. *Morbidity and Mortality Weekly Report* 2000; 49:3833-3837.

Johnson RE, Green TA, Schachter J, Jones RB, Hook III, EW, Black CM, Martin DH, St. Louis ME, Stamm WE. Evaluation of nucleic acid amplification tests as reference tests for *Chlamydia trachomatis* infections in asymptomatic men. *Journal of Clinical Microbiology* 2000; 38:4382-4386.

Kilmarx PH, Limpakarnjanarat K, Kaewkungwal J, Saisorn S, Uthaivoravit W, Young NL, Mastro TD. Disease progression and survival with human immunodeficiency virus type 1 (HIV-1) subtype E infection among female sex workers in Thailand. *Journal of Infectious Diseases* 2000;181:1598-606.

Kilmarx PH, Limpakarnjanarat K, Saisorn S, Mock PA, Mastro TD. High mortality among women with human immunodeficiency virus type 1 (HIV-1) infection in Thailand. *Lancet* 2000; 356:770-771.

Kilmarx PH, Supawitkul S, Wankrairoj M, Uthaivoravit W, Limpakarnjanarat K, Saisorn S, Mastro TD. Explosive spread and effective control of human immunodeficiency virus in northernmost Thailand: the epidemic in Chiang Rai province, 1988-99. *AIDS* 2000; 14:2731-2740.

Koumans EH, Sternberg M, Gwinn M, Swint E, Zaidi A, St. Louis ME. Geographic variation of HIV infection in childbearing women with syphilis in the United States. *AIDS* 2000;14:279-287.

Levine WC. Chapter 272: Sexually transmitted diseases and genital tract infections. In: Kelley's Textbook of Internal Medicine, fourth edition, Edited by H. David Humes et al (eds), Lippincott Williams & Wilkins, Philadelphia. 2000; pp1948-1957.

Mertz KJ, **Finelli L**, **Levine WC**, Mognoni RC, Berman SM, Fishbein M, Garnett GP, St. Louis ME. Continuing transmission of gonorrhea in adolescents and young adults in Newark, NJ: Re-evaluating prevention strategies. *Sexually Transmitted Diseases* 2000; 27:201-207.

McCutchan FE, Viputtigul K, de Souza MS, Carr JK, **Markowitz LE**, Buapunth P, McNeil JG, Robb ML, Nitayaphan S, Birx DL, Brown AE. Diversity of envelope glycoprotein from human immunodeficiency virus type 1 of recent seroconverters in Thailand. *AIDS Research and Human Retroviruses* 2000;16: 801-805.

Moore SG, Miller WC, Hoffman IF, **Fox KK**, Owen-O'Dowd J, McPherson T, Privette A, Schmitz JL, Leone PA. Clinical utility of measuring white blood cells on vaginal wet mount and endocervical gram stain for the prediction of chlamydial and gonococcal infections. *Sexually Transmitted Diseases* 2000;27:530-538.

Schmid G, **Markowitz L**, Joesoef R, **Koumans E**. Bacterial vaginosis and HIV infection [editorial]. *Sexually Transmitted Infections* 2000; 76(1):3-4.

Somani J, Bhuller VB, **Workowski KA**, Farshy CE, Black CM. Multiple drug-resistant *Chlamydia trachomatis* associated with clinical treatment failure. *Journal of Infectious Diseases* 2000; 181:1421-1427.

Swygard H, **Levine WC**, **Mosure DJ**. Gonorrhea — United States, 1998. *Morbidity and Mortality Weekly Report* 2000; 49:538-542.

Wang SA, Panlilio AL, Doi PA, White AD, Stek M, Saah A, the HIV PEP Registry Group. Experience of healthcare workers taking postexposure prophylaxis after occupational human immunodeficiency virus exposures: findings of the HIV Postexposure Prophylaxis Registry. *Infection Control and Hospital Epidemiology* 2000; 21:780-785.

Wang SA, Puro V. Toxicity of postexposure prophylaxis for human immunodeficiency virus. In: Baillière's Clinical Infectious Diseases, Prevention Strategies for Health Care Workers. Panlilio AL and Cardo DM, eds. Baillière Tindall, London, 2000:349-363.

Wang SA, Tokars JI, Bianchine PJ, Carson LA, Arduino MJ, Smith AL, Hanson NC, Fitzgerald EA, Epstein JS, Jarvis WR. *Enterobacter cloacae* bloodstream infections traced to contaminated human albumin. *Clinical Infectious Diseases* 2000; 30:35-40.

Xu F, **Kilmarx PH**, Supawitkul S, Yanpaisarn S, Limpakarnjanarat K, Manopaiboon C, Korattana S, Mastro TD, St Louis ME. HIV-1 seroprevalence, risk factors, and preventive behaviors among women in northern Thailand. *Journal of Acquired Immune Deficiency Syndromes and Human Retrovirology* 2000; 25:353-359.

Xu F, Schillinger JA, Markowitz LE, Sternberg MR**,** Aubin MR, St. Louis ME. Repeat *Chlamydia trachomatis* infection in women: analysis through a surveillance registry in Washington state, 1993-1998. *American Journal of Epidemiology*. 2000; 152(12):1164-1170.

Health Services Research and Evaluation Branch

CDC (**Chesson HW**, Harrison P, **Irwin KL**, Kassler WJ, Shelton D). Alcohol policy and sexually transmitted disease rates - United States, 1981-1995. *Morbidity and Mortality Weekly Report* 2000; 49(16):346-349.

Chesson HW, Harrison P, Kassler WJ. Sex under the influence: the effect of alcohol policy on sexually transmitted disease rates in the US. *Journal of Law and Economics* 2000; XLIII (1): 215-238.

Chesson HW, **Gift TL.** The increasing marginal benefit of condom usage. *Annals of Epidemiology*. 2000, 10 (3):154-159.

Chesson HW, Pinkerton SD. STDs and the increased risk for HIV transmission: implications for cost-effectiveness analyses of STD prevention interventions. *Journal of Acquired Immune Deficiency Syndromes.* 2000; 24(1):48-56.

Chesson HW, Viscusi WK. The heterogeneity of time-risk tradeoffs. *Journal of Behavioral Decision Making*. 2000;13(2):251-258.

Greenlund KJ, Keenan NL, **Anderson LA**, Mandelson MT, Newton KM, LaCroix AZ. Does provider prevention orientation influence female patients' preventive practices? *American Journal of Preventive Medicine* 2000;19(2):104-110.

Irwin KL, Moorman AC, O'Sullivan MJ, Sperling R, Koestler ME, Soto I, Rice R, Brodman M, Yasin S, Droese A, Zhang D, Schwartz DA, Byers RH, for the PID-HIV Infection Study Group. Influence of human immunodeficiency virus infection on pelvic inflammatory disease. *Obstetrics & Gynecology* 2000;95(4):525-534.

Mandelson MG, Curry SJ, **Anderson LA**, Nadel M, Lee N, Rutter C, LaCroix AZ. Colorectal cancer screening: Participation by older women. *American Journal of Preventive Medicine* 2000;19(3):148-154.

Pinkerton SD, **Chesson HW**, Holtgrave DR, Kassler WJ, Layde PM. When is an HIV infection prevented and when is it merely delayed? *Evaluation Review* 2000; 24(3):251-271.

Rein DB, Kassler WJ, **Irwin KL**, Rabiee L. Direct medical cost of pelvic inflammatory disease and its sequelae: decreasing, but still substantial. *Obstetrics & Gynecology* 2000; 95(3):397-402.

Tao G, **Irwin KL**, Kassler WJ. Missed opportunities to assess sexually transmitted diseases in U.S. adults during routine medical checkups. *American Journal of Preventive Medicine* 2000; 18(2):109-114.

Tao G, Kassler WJ, Rein DB. Medical care expenditures for genital herpes in the United States. *Sexually Transmitted Diseases* 2000; 27(1):32-38.

Tao G, **Walsh CM**, **Anderson LA**, **Irwin KL.** Avenues to combat the silent epidemic of chlamydia infection in managed care organizations: an analysis of the HEDIS measure on screening for *Chlamydia trachomatis*. *Preventive Medicine in Managed Care* 2000; 1(4):177-183.

Walsh CM, **Anderson LA**, **Irwin K**. The silent epidemic of *Chlamydia trachomatis*: the urgent need for detection and treatment in women. *Journal of Women's Health & Gender-Based Medicine* 2000; 9(4):339-343.

Weidle PJ, Ganea CE, **Irwin KL**, Pieniazek D, McGowan JP, Olivo N, Ramos A, Schable C, Lal RB, Holmberg SD, Ernst JA. Presence of human immunodeficiency virus (HIV) type 1, group M, non-B subtypes, Bronx, New York: a sentinel site for monitoring HIV genetic diversity in the United States. *The Journal of Infectious Diseases* 2000;181:470-475.

Zhuo J, **Tao G**, Ebrahim SH, Wang S, Luo Z, Wang H. The relationship of hepatitis B virus infection between adults and their children in Guangxi Province, China. *Journal of Hepatology* 2000; 33:628-631.

International Activities Unit

Joesoef MR, Kio D, Linnan M, Barakbah Y, Kambodji A, Idajadi A. Determinants of condom use in female sex workers in Surabaya, Indonesia. *International Journal of STD & AIDS* 2000;11:262-265.

Schmid G, Markowitz L, **Joesoef MR**, Koumans E. Bacterial vaginosis and HIV infection [editorial]. *Sexually Transmitted Infections* 2000; 76(1):3-4.

Program Development and Support Branch

Farley TA, **Kahn RH**, Johnson G, Cohen DA. Strategies for syphilis prevention: Findings from surveys in a high-incidence area. *Sexually Transmitted Diseases* 2000; 27:305-310.

Kahn RH, Moseley KE, Johnson G, Farley TA. Potential for community-based screening, treatment, and antibiotic prophylaxis for syphilis prevention. *Sexually Transmitted Diseases* 2000; 27(4):188-192.

Schmid G, Markowitz L, Joesoef R, Koumans E. Bacterial vaginosis and HIV infection [editorial]. *Sexually Transmitted Infections* 2000; 76(1):3-4.

Statistics and Data Management Branch

Hadgu A. Discrepant analysis is an inappropriate and unscientific method. *Journal of Clinical Microbiology* 2000; 38(11):4301-4302.

Koumans EH, **Sternberg MR**, Gwinn M, Swint E, **Zaidi A**, St. Louis ME. Geographic variation of HIV infection in childbearing women with syphilis in the United States. *AIDS* 2000;14:279-287.

Wall PA, **Devine OJ**. Interactive analysis of the spatial distribution of disease using a geographic information system. *Journal of Geographical Systems* 2000; 2:243-256.

Xu F**,** Schillinger JA**,** Markowitz LE**, Sternberg MR,** Aubin MR, St. Louis ME. Repeat *Chlamydia trachomatis* infection in women: analysis through a surveillance registry in Washington state, 1993-1998. *American Journal of Epidemiology*. 2000;152:1164-1170.

Office of the Director

Aral SO. Behavioral aspects of sexually transmitted diseases: core groups and bridge populations [editorial]. *Sexually Transmitted Diseases* 2000; 27(6):327-328.

Aral SO, Roegner R. Mathematical modeling as a tool in STD prevention and control: a decade of progress, a millennium of opportunities. *Sexually Transmitted Diseases* 2000; 27(10):556-557.

CDC (Chesson HW, Harrison P, Irwin KL, Kassler WJ, **Shelton D**). Alcohol policy and sexually transmitted disease rates – United States, 1981-1995. *Morbidity and Mortality Weekly Report* 2000; 49(16):346-349.

Gorbach PM, **Aral SO**, Celum C, Stoner BP, Whittington WLH, Galea J, Coronado N, Connor S, Holmes KK. To notify or not to notify: STD patients' perspectives of partner notification in Seattle. *Sexually Transmitted Diseases* 2000; 27(4):193-200.

Gunn RA, Fitzgerald S, **Aral SO.** Sexually transmitted disease clinic clients at risk for subsequent gonorrhea and chlamydia infections: possible "core" transmitters. *Sexually Transmitted Diseases* 2000; 27(6): 343-349.

Mertz KJ, Finelli L, Levine WC, Mognoni RC, **Berman SM**, Fishbein M, Garnett GP, St. Louis ME. Continuing transmission of gonorrhea in adolescents and young adults in Newark, NJ: Re-evaluating prevention strategies. *Sexually Transmitted Diseases* 2000; 27:201-207.

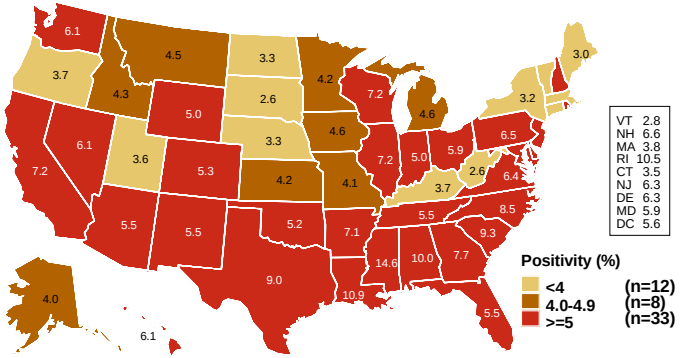
Rothenberg RB, **Wasserheit JN**, St. Louis ME, Douglas JM, AD HOC STD/HIV Transmission Group. The effect of treating sexually transmitted diseases on the transmission of HIV in dually infected persons. A clinic-based estimate. *Sexually Transmitted Diseases* 2000; 27:411-416.

Spencer JN. A critical piece by whatever name. *Sexually Transmitted Diseases* 2000;19-20.

Stoner BP, Whittington WL, Hughes JP, **Aral SO**, Holmes KK. Comparative epidemiology of heterosexual gonococcal and chlamydial networks: implications for transmission patterns. *Sexually Transmitted Diseases* 2000; 27(4):215-223.

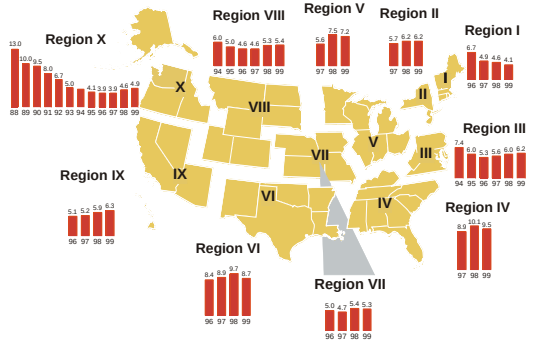
Wasserheit JN. Syphilis:a barometer of community health [editorial]. *Sexually Transmitted Diseases* 2000; 27(6):311-312.

Chlamydia — Positivity among 15-24 year old women tested in family planning clinics by state, 1999



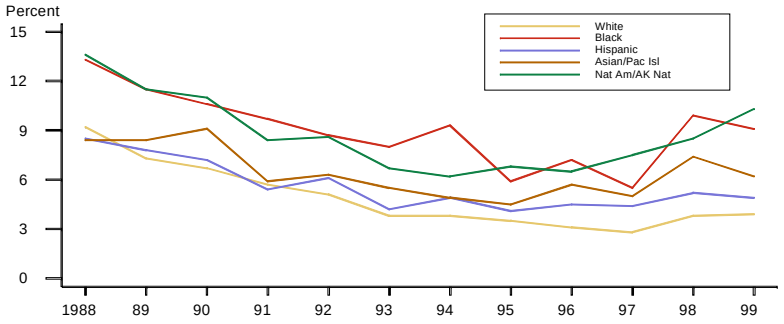
Note: States reported chlamydia positivity data on at least 500 women aged 15-24 years screened during 1999 except for Rhode Island; for Puerto Rico, - chlamydia positivity data were reported for August-December only.
SOURCE: Regional Infertility Prevention Programs; Office of Population Affairs; Local and State STD Control Programs; Centers for Disease Control and Prevention

Chlamydia — Trends in positivity among 15-44 year old women tested in family planning clinics by HHS regions, 1988–1999



Note: Trends adjusted for changes in laboratory test method and associated increases in test sensitivity. No data on laboratory test method available for Region VII in 1995 and Regions IV and V in 1996.
SOURCE: Regional Infertility Prevention Programs; Office of Population Affairs; Local and State STD Control Programs; Centers for Disease Control and Prevention

Chlamydia — Positivity among women tested in family planning clinics by race and ethnicity: Region X, 1988–1999



Note: Women who met screening criteria were tested. Trends not adjusted for changes in laboratory test method in 1994 and 1999 and associated increases in test sensitivity.
SOURCE: Regional Infertility Prevention Program: Region X Chlamydia Project (Alaska, Idaho, Oregon and Washington)

Chlamydia — Reported rates per 100,000 population by race/ethnicity: United States,1999